

# W5YI

National Volunteer Examiner Coordinator

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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May 15, 1989

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## CONGRESS EXAMINES 220-222 MHz REALLOCATION

**ARRL:** "FCC had its mind made up in advance and did not really pay attention to comments. Reallocation will hurt packet radio and emergency communications ...and will cause tremendous disruption."

**FCC:** "We read all comments and ARRL has made many presentations. Reallocation will cause minimal difficulty for amateur service. No purpose would be served by allowing ARRL further argument."

**UPS:** "We want only to construct our own network for vehicle location and dispatch. We have spent \$3 million already on narrowband radio and are spending \$100,000/month on it. Amateurs have already had many opportunities to make arguments before FCC and further delays will hurt U.S. competitiveness."

**NCS:** "FCC did not take our comments seriously. NCS member agencies agree that Amateur Radio is necessary for communications in national emergencies."

The FCC decision to terminate 220-222 MHz access by ham operators (Docket 87-14) was the subject of a May 11th Congressional oversight hearing by a Subcommittee of the **House Committee on Government Operations**. The hearing was chaired by Rep. Bob Wise (D-WV). Other members of the subcommittee are Glenn English (D-OK), Edolphus Towns (D-NY), John Spratt (D-SC), Louise M. Slaughter (D-NY), Al McCandless (R-CA) and Steven Schiff (R-NM.)

The 220-222 MHz reallocation was accomplished last August in a quarrelsome proceeding that drew 5,000 angry filings from ham operators, followed by more than 550 petitions for reconsideration. At a date yet to be specified, the FCC will require amateur facilities such as repeaters and packet radio network links to vacate 220-222 MHz. Hams will either have to discontinue these operations, attempt to relocate them in already-populated amateur spectrum at 222-225 MHz, or move them to frequencies in other amateur bands.

The subcommittee which oversees government operations was looking into charges that the FCC may (1.) have not followed proper administrative procedures, (2.) may have acted arbitrarily and (3.) disregarded thousands of comments.

Subcommittee chairman Robert Wise, Jr. (D-WV) announced, "We're going to investigate why the FCC feels this band is underutilized by amateurs, and why this action will not impact our nation's emergency communications system negatively. Why is this the most appropriate band for reallocation? Why was there no compromise apparently considered? This is about the ability of our ham radio operators to continue to administer the emergency radio network that they have successfully operated for many years."

**Dave Sumner, K1ZZ**, ARRL Executive Vice President, ARRL West Virginia Section Manager Karl S. Thompson of Charleston, and Richard Rudman of Encino, California made up the ARRL



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contingent. Representatives from the Federal Communications Commission, Department of Defense and United Parcel Service also testified. The hearing lasted some three hours and was packed with amateurs and members of the press.

West Virginia Section Manager **Karl Thompson, K8KT**, led the ARRL testimony by stressing the volunteer nature of Amateur Radio emergency communications and particularly its significance in his state. He underlined the importance of the threatened band segment to repeater linking and packet radio development.

ARRL Executive Vice President Sumner, K1ZZ, testified that the process used by the FCC in deciding to reallocate the bottom two MHz of the 220 MHz Amateur Radio band to land mobile use had failed to take into account the comments of individual amateurs which documented both its importance to public service and experimental communication, and the great cost to amateurs and to the public if these operations had to be moved elsewhere or abandoned for lack of space. He cited alternatives to the reallocation which had not been adequately considered in the proceeding.

Sumner said the ARRL had offered several bands such as 30-50 MHz as an alternative location for narrowband technologies (although among these bands ARRL did not mention the vacant six megahertz in the 900 MHz band allocated to the General Purpose Mobile Radio Service and proposed to be allocated to air-ground telephone or a combination of services.)

The thrust of the organization's *written* presentation is that the reallocation was a foregone conclusion since its proposal by the FCC, and that the Commission's "bias for a pre-determined result is making a mockery of the rule-making process in this case...our pleas are falling on deaf ears."

Throughout the hearing, amateur representatives described the cost and complexity of transitioning 220-222 MHz operations to the 222-225 MHz band. Sumner said he believed that many 220-222 MHz operations would be shut down permanently due to the expense of relocating, even if it could be done. FCC Chief Engineer Thomas Stanley, on the other hand, testified that only modest time and effort would be required in retuning equipment for the changed allocation: "Consequently, it appeared that the change in the allocation would have little or

no cost impact on amateurs."

**Richard Rudman, W6TIA**, Chairman of the Los Angeles County Emergency Public Information Advisory Group, described the crowded conditions in Southern California in the entire 220 MHz band and the tremendous impact of the FCC decision on packet radio development. He stressed the importance of Amateur Radio in emergency planning. Rudman is also chief engineer of KFWB Radio, Hollywood, California.

FCC Chief Engineer Dr. Thomas P. Stanley, United Parcel Service Strategic Planning Manager Gene Hughes and Dr. Dennis Bodson of the National Communications System (which sort of falls under the Department of Defense) also gave testimony. In response to questions from the Subcommittee, Dr. Stanley conceded, among other things, that the reduction in the size of the band was a significant loss of amateur capability that was not offset by the granting of primary status in the remainder of the band.

A major point of contention centered around whether the FCC should have accepted late-filed comments by UPS which described its network. Stanley insisted that ample reply opportunities were granted for all filings and that the Commission "...has not turned away a single missive from anyone in this proceeding." He said he expects the numerous petitions for reconsideration to be acted upon this month or in early June.

Upon questioning about UPS' own motives for participating in the 220 MHz proceeding, Gene Hughes maintained that UPS does not necessarily intend to enter the telecommunications business but desires access to the 220-222 MHz band only to construct its own radio system. Hughes would not rule out licensing or sale of UPS' vehicle-location or communications technology to the public if other vendors declined to do so, however.

Dennis Bodson of the *National Communications System (NCS)* objected to the Commission "summarily dismissing" timely filed pleadings of the Secretary of Defense objecting to the reallocation while accepting late filed comments from UPS.

The National Communications System was established in 1963 by Pres. John F. Kennedy as a result of shortcomings in emergency communications identified during the Cuban Missile Crisis in

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QUESTION POOLS  
Novice - Element 2  
Technician - Element 1  
General - Element 1

NEW!!

AMATEUR RADIO QUESTION POOLS  
Order Form: 1  
Contributor: 1  
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Subcommittee members conceded their unfamiliarity with the technical aspects of radio. They did not appear to come to any conclusion about the FCC's handling of the docket ...or about any serious damage done to the country's emergency communications capabilities as a result of the Commission's decision. The hearing record will be kept open for several weeks to give witnesses opportunity to respond to written questions that the subcommittee will provide. The Subcommittee will then review the



this, that there was never any direct allocation to the land-based [services], to amateur or any other activity in this band?"

**(Sumner:)** "That is essentially correct as far as it goes. The problem with it is that we understood that the ultimate allocation question would be based on the outcome of a joint NTIA/FCC study of the allocation, and to our knowledge such a study has never been completed."

**(McCandless:)** "The knowledge was available that there was no real guarantee that would permit the operation in this band for any service until such time as the plan was developed."

**(Sumner:)** "Except that we were already there, I guess."

## RELOCATING EXISTING 220 OPERATIONS

**(Wise:)** "Let's assume this [reallocation] order goes through. Where do you move emergency services response to, and how effective will you be?"

**(Sumner:)** "We have to go back to the fact that these services are established by volunteers. These are not people who are paid to do this, these are people who are doing it out of their own pocket. So I don't believe that there's any guarantee they would be re-established anywhere."

**(Wise:)** "And why would that be?"

**(Sumner:)** "Because the cost associated with it has to come out of the household egg money, if you will."

## REPEATER DIRECTORY & 220 MHz USAGE

**(Sumner:)** "The FCC has little hard information on occupancy of any of its bands allocated to land mobile, amateur, or any other service. That is a deficiency that the Government Accounting Office has pointed out. It does cause a lot of having to fly blind. ...There is a cost associated with moving from one band to another. Within the [222-225] band in congested parts of the country, there isn't room. In areas like Southern California, New York City, those three MHz are already occupied. Reaccommodation cannot occur without tremendous disruption."

**(McCandless:)** "There is a document called a Re-

peater Directory. Is it a listing of the people involved, is that an insufficient listing?"

**(Sumner:)** "It is not a complete listing of repeaters. It is a listing of those repeaters that welcome transient operators."

**(Rudman:)** "It doesn't list anything to do with what happens in this two MHz [220-222] really, such as control links and experimentation. It's just a repeater directory and is not complete."

**(McCandless:)** "So there really isn't anything out there that one can put his hand saying so many thousand users are on there."

**(Sumner:)** "That's exactly the case throughout the spectrum."

**(McCandless, to Stanley:)** "There is no concrete or acceptable criteria for the number of users of these different channels?"

**(Stanley:)** "Our findings were largely based on physical facilities...repeaters. We used the repeater directory as best evidence. We basically counted up the repeaters at 220 and in the other bands and used it as an indicator of usage."

## EMERGENCY COMMUNICATIONS

**(Wise:)** "I can't see how the Commission gave due weight to the vital emergency services provided by the amateurs to the National Communications System."

**(Stanley:)** "Amateur radio is not an official part of the federal government's emergency use of radio. We took that into account. The NCS filed comments, but those comments are not supported by the federal government agency responsible for emergency use of the spectrum."

**(Wise:)** "Do the amateurs and the NCS have a formal memorandum of understanding?"

**(Stanley:)** "To my knowledge, we've heard that they have a relationship, but the FCC has never seen a memorandum of understanding..."

**[NOTE:** The NCS witness directly contradicted Stanley's statement. He displayed the ARRL/NCS Memorandum of Understanding (MOU) and said the FCC **DOES** have a copy, although he said "we



would not assert that Dr. Stanley has a copy."]

## CONTRIBUTING TO THE RADIO ART

**(Wise:)** "How did the FCC weigh the contributions of amateurs, made at their own expense, to the development of new radio technologies?"

**(Stanley:)** "I'm glad you asked that question. I've heard that the Commission has ignored the 500 or 5000 responses. We have read every single mis-sive from the amateurs, and in fact the entire docket has been read by several parties several times. We may not have been specific in referring to individual comments, but let me assure you that the entire docket has been read. As to the amateurs' own use of technologies, although that's part of the amateur service, we feel that their role in the advancement in new technologies can be accomplished in the other bands, in the 3 MHz we've given them on a primary basis and in the other bands."

## COST TO NCS OF REALLOCATION

**(Wise:)** "What would be the financial cost to NCS if this FCC order goes through?"

**(Bodson:)** "The financial cost would be an intangible one. We do not fund amateurs for providing this capability, by which we do have an agreement with them, contrary to what the FCC indicated. If this goes through, and this capability becomes non-existent, then we will have to look to other alternatives, none of which we see readily available at this time, that may have a financial cost."

**(Wise:)** "So the present arrangement actually results in savings to the federal government."

**(Bodson:)** "Absolutely, sir."

**(Wise:)** "And this could be threatened by this rule-making."

**(Bodson:)** "Yes sir, it could."

## DEFENSE ON RADAR SPECTRUM AT 220

**(McCandless:)** "Since the FCC Report & Order, has the Defense Department filed any comments on the issue of radiolocation?"

**(Bodson:)** "The Dept. of Defense is pursuing this endeavor through the Interdepartmental Radio Advi-

sory Committee [IRAC]."

**(McCandless)** "But have they filed with the FCC?"

**(Bodson:)** "The Dept. of Defense has not. The NCS did."

## UPS AS BENEFACTOR OF 220-222 MHZ

**(Wise:)** "Am I correct that if you were to receive this allocation, that this band would not be used exclusively for you, but for anyone in land mobile?"

**(Hughes:)** "UPS's needs would be only a fraction of the 200 channels that would be made available. There would be dozens, probably hundreds, of other companies that would use this spectrum, I imagine. That's quite a large amount of spectrum, 200 channels."

## DEPT. OF DEFENSE SUPPORTS AMATEURS

**(McCandless:)** "Our experience here on the Hill is that the Dept. of Defense is *king of the hill*, when it comes to priorities, if Defense can justify that priority. Here they're filing what would appear to be a civilian type of direction, one bureau on behalf of another bureau or something."

**(Bodson:)** "Sir, first of all, the Dept. of Defense is one of the member organizations of the NCS and they are not civilian. Therefore, we can collectively look at this petition for reconsideration [in such a way that it] also has the acclimation of the Dept. of Defense."

## ALLOW ARRL TO GIVE ORAL ARGUMENT?

**(Stanley:)** "We have been asked to allow the amateurs to address all of the Commissioners in an en banc fashion [a sort of "town-meeting" or like a city council hearing] But we have already permitted oral arguments to each Commissioner. The Chairman's office has talked to the amateur leadership on at least 2 occasions. I'm pretty sure all the other Commissioners have. So we already have permitted oral arguments. What the amateurs would like is a particular type of oral argument in almost this kind of a [hearing] setting. We find these for a regulatory agency to be a fairly burdensome activity. While we haven't said yes or no to that, we basically have never done such a thing to my knowledge in a rulemaking proceeding having to do with



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allocations, and certainly not at this stage which is very late in the process ...at the reconsideration stage."

(Wise:) "Well, I understand, Mr. Stanley, it may be a fairly burdensome activity, but I've got to be frank with you, that *this* is sometimes a burdensome activity. But this is what we're supposed to do. I have a lot of oral presentations made in the office one-on-one, but something out in the full light of public scrutiny, and a chance to go back and forth with parties around the table point-counterpoint. I think that's a very valuable process."

## BOB HANSON, DEAD AT AGE 47

**Robert A. Hanson/W9AIF** became a Silent Key on May 2 in Chicago while undergoing a liver transplant. Bob founded the Scanner Association of North America (SCAN) in 1978 while working with Bearcat as their advertising agency's account executive and was its Managing Director until passing. SCAN provides products and services to scanner users, including frequency guides and other publications. As Marketing Manager, Communications Products at Shure Bros. (Evanston, IL) Bob helped direct the company's successful ventures into mobile radio and cellular microphone products.

Through SCAN, Bob made some important contributions to the radio monitoring field. Over the years, SCAN put resources into lobbying to modify so-called "privacy" legislation in several states and at the federal level to ensure that honest radio users would not be penalized. Every month for ten years, SCAN gave a cash award and commendation to a police, fire, sheriff's department or other public safety official or citizen nominated by members for heroic actions "above and beyond the call of duty."

Bob, a very creative man, was responsible for conceiving the "Neighborhood Watch" anti-crime program now in use throughout the U.S. and was a key player in getting NASA to make Space Shuttle audio available for retransmission by amateurs.

Bob is survived by his wife Marilyn and sons Peter (16) and Andrew (13). Chicago-area amateurs have established a fund to assist the family with medical expenses not covered by insurance. Contributions to the **Robert Hanson Organ Transplant Fund** may be sent to: Box 766, Morris, IL 60450.

## MARCH AMATEUR LICENSING STATS

<u>March</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	
New					
Amateurs	1606	795	2733	2219	
<u>Upgrading:</u>					
Novices	877	373	1636	921	
Technicians	311	116	632	353	
Generals	337	138	486	291	
Advanced	230	90	384	173	
<b>Total:</b>	<b>1755</b>	<b>717</b>	<b>3138</b>	<b>1738</b>	
<u>Renewals:</u>					
Total Renew:	3324	4017	6043	*417	
Novices	232	406	428	*60	
<u>Purged:(*)</u>					
Total Drop:	1237	1282	946	1037	
Novices	876	806	577	460	
<u>Census:</u>					
<b>Indiv. Oper.</b>	<b>420787</b>	<b>420692</b>	<b>434983</b>	<b>449412</b>	
Change/Year	+10012	- 95	+14291	+14429	
<u>Indiv. Operators by Class:</u>					
<u>Extra</u>	<u>Advan.</u>	<u>General</u>	<u>Tech.</u>	<u>Novice</u>	<u>Total:</u>
<u>March 1986:</u>					
39225	98765	117911	85147	79744	<b>420787</b>
9.3%	23.5%	28.0%	20.2%	19.0%	100%
<u>March 1987</u>					
41443	97429	115015	85760	81045	<b>420692</b>
9.8%	23.2%	27.3%	20.4%	19.3%	100%
<u>March 1988:</u>					
44617	98505	113900	95256	82705	<b>434983</b>
10.3%	22.6%	26.2%	21.9%	19.0%	100.0%
<u>March 1989:</u>					
47734	99811	114606	105002	82259	<b>449412</b>
10.6%	22.2%	25.5%	23.4%	18.3%	100.0%
Club/					
RACES &	(1986)	(1987)	(1988)	(1989)	
Military	2740	2499	2379	2475	
<b>Total Active</b>	<b>423527</b>	<b>423191</b>	<b>437362</b>	<b>451887</b>	
% Increase		-.1%	+3.3%	+3.3%	

(\* = Note that the renewals are again drastically reduced. This is due to the ten year term license that started in January of 1984. As a result, the licensing statistics *will not be comparable* with previous years. There were 35,835 renewals last year.

## 1988 AMATEUR LICENSE RENEWALS/MONTH

Jan.	1972	Feb.	4193	Mar.	6043
April	2916	May	4088	June	2366
July	2366	Aug.	3220	Sept.	2437
Oct.	2120	Nov.	1874	Dec.	940

This means that the total number of amateurs would be about 3,000 less per month if the five year license had been continued.



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## AMATEUR RADIO CALL SIGNS

...issued as of the first of May 1989:

Radio District	Gp. "A" Extra	Gp. "B" Advan.	Gp. "C" Tech/Gen	Gp. "D" Novice
0	WS0V	KF0CM	N0KNK	KB0EMA
1	NW1G	KC1OP	N1GMN	KA1TSK
2	WO2R	KE2MQ	N2JHX	KB2HSC
3	NU3S	KD3MP	N3HAL	KA3UOE
4 (*)	AB4OB	KM4RL	N4VPB	KC4KJB
5 (*)	AA5LJ	KG5TR	N5OHX	KB5JHA
6 (*)	AA6NP	KJ6TE	N6UYS	KC6DIF
7	WZ7P	KF7TH	N7MQX	KB7HQE
8	WR8Y	KE8YQ	N8KSK	KB8HCS
9	WG9X	KE9PX	N9IJX	KB9CPT
N. Mariana Is.	AH0H	AH0AE	KH0AM	WH0AAL
Guam	KH2K	AH2CE	KH2DS	WH2AMA
Johnston Is.	AH3B	AH3AC	KH3AB	WH3AAC
Midway Island		AH4AA	KH4AD	WH4AAF
Palmyra/Jarvis	AH5A			
Hawaii	(**)	AH6JT	NH6SW	WH6CDB
Kure Island			KH7AA	
Amer. Samoa	AH8C	AH8AD	KH8AH	WH8AAY
Wake Wilkes Peale	AH9A	AH9AD	KH9AD	WH9AAH
Alaska	(**)	AL7LD	NL7RF	WL7BUV
Virgin Islands	NP2E	KP2BO	NP2DB	WP2AGQ
Puerto Rico	(**)	KP4QD	WP4VG	WP4IIP

**NOTE:** \* = All 2-by-1 format call signs have been assigned in the 4th, 5th and 6th radio districts. 2-by-2 format call signs from the AA-AL prefix block now being assigned to Extra Class amateurs. \*\* = All Group "A" (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico. Group "B" (2-by-2) format call signs are assigned to Extra Class when Group "A" run out.

[Source: FCC, Gettysburg, Pennsylvania]

**NOTICE FROM JARL...** A warning has been sent to us from the International Section of the **Japan Amateur Radio League** to all radio amateurs to disregard the QSL information of the station claiming the call sign **9G1R**. This is probably an unauthorized/bootleg station. The 9G prefix is ITU assigned to Ghana.

JARL says: "Since the beginning of the year, JARL has, monthly, received a noticeable number of QSLs bearing the above call sign and since we have no information of the QSL route, we seek your intermediary in publicizing this fact amongst your readers."

## MORE CODE-FREE PETITIONS FILED!

Two more petitions for rulemaking were filed last week with the FCC proposing code-free entry into Amateur Radio. **David Stall, N5MKK** (15710 Piper's View, Webster, TX 77598) filed his petition on May 8th, ...**Dr. Michael C. Trahos, KB4PGC** (4600 King St. Suite 4E, Alexandria, VA 22042) the following day.

Stall proposed to create a new class of license titled "**Limited**" that would be issued to applicants passing the Element 2 (Novice written) examination. Limited class privileges would duplicate those of the Novice Class above 30 megahertz. Stall also suggested that the scope of the Element 2 question pool be expanded or modified to address the restriction of the Limited Class license. He felt it important that any new ham class be compatible with the established licensing structure, privileges and nomenclature.

Stall concludes "...numerous recent surveys have demonstrated that the concept of a no-code license is rapidly attracting a wide base of support within the amateur community. Movement in this direction has strengthened since the 1979 WARC that reduced Morse code requirements above 30 MHz. This trend has continued as recently as 1988 with abolishment of shipboard capability [Morse code] requirements by the *International Maritime Organization* and even more relevant, Canada's stated intention to adopt a no-code amateur license."

Stall said everyone will gain from a code-free entry into amateur radio. Amateurs will benefit from increased use of under-utilized band segments "...thereby reserving these radio frequencies for my future use." He also said "...innovative radio technology advances [will be made] by future Limited class operators [and] the availability of equipment will increase and thereby reduce the cost..." The public will profit "...from the influx of new amateurs who will provide support for countless public service and emergency communications."

The petition filed by Mike Trahos (an osteopathic surgeon, medical school instructor and certified telecommunications engineer) was very professionally completed! Trahos not only holds a ham ticket, but also Business Radio Service, GMRS and Special Emergency Radio Service licenses which he uses for personal, business, medical and emergency/public assistance. The petition, encompassed



more than thirty typewritten pages, contained a Table on Contents, bibliographic footnotes documenting his contentions and an appendix of proposed §Part 97 changes. The majority of the petition was taken up by very well-supported background material. Some points made by Dr. Trahos:

(1.) "The current number of licensed amateur operators does not warrant the total amount of radio spectrum allocated to the ARS. Unless at the very minimum, a no-code Novice type theory class license is created, the present ARS will experience a stagnant or decreasing number of members with increasing reallocation of ARS spectrum by the FCC to other land mobile services."

(2.) Trahos substantiates this statement with an FCC chart of the top 21 MSA (metropolitan statistical area) markets showing future private land mobile radio service (PLMRS) needs for the year 2000. Even considering the effects of new spectrum efficient technology ...such as trunking, digital/narrow-band emissions and cellular technology - business spectrum requirements far exceed availability.

(3.) A 1983 FCC Report recommended that spectrum be reallocated to the PLMRS from the 216-225 MHz band, the land mobile reserve between 821 and 947 MHz ...and unused UHF-TV channels. "Long term, the FCC will have to look to spectrum above 1 GHz." Trahos said that UHF-TV spectrum is on long term "hold" until development of terrestrial High Definition Television (HDTV.)

(4.) The present Canadian (no-code) *Amateur Digital Radio Operator's Certificate* (ADROC) with its difficult written theory exam has not been popular. "Over the first seven years the ADROC certificate was available, only fifty *new* individuals entered the [Canadian] ARS." Canadian experience clearly shows that when a no-code license class is more difficult to obtain than that of the lowest class of code license, the no-code license fails miserably in attempting to encourage potential amateurs to become licensed amateurs."

(5.) "There appears to exist an unwritten view in the telecommunications industry in that if one wants a change in the amateur service rules, it must first originate with the ARRL. Within the past few years however, political unrest has occurred in the amateur community regarding the political views taken by the ARRL. These new political factions have been able to exert enough pressure to cause the ARRL to

bend."

(6.) "The ARRL no-code committee's recommendations do not, and will not, adequately promote Amateur Radio in this country. ...The committee's proposals are designed to cope with the political unrest in the amateur community. ...A proper catalyst is needed to encourage Amateur Radio in the young who find Morse-Code a deterrent but who are also not yet technically experienced enough to pass a Technician class theory type exam. ...to require a no-code prospective amateur to have more technical knowledge than a Novice code prospective amateur is essentially putting the 'cart before the horse'."

(7.) Trahos proposes to simply add two new code-free amateur radio operator licenses. The present classes remain unaltered "...with the exception that the Novice class would be renamed Novice-Plus and the Technician license renamed Technician-Plus." The [new code-free] Novice would be required to only pass Element 2 (Novice written exam) to obtain present Novice privileges above 30 MHz. The [new code-free] Technician would require only Element 2 and 3A, to obtain VHF and higher Technician spectrum ...with the exception that operation in the 2 meter band 144-148 would not be authorized.

(8.) Dr. Trahos also said he would entertain any additional proposals regarding expanding the privileges for the *new* Novice, Novice-Plus, *new* Technician and Technician-Plus classes.

## CQ SURVEY ON CODE-FREE HAM CLASS

CQ Magazine has finished compiling the results of the their reader survey on the desirability of a code-free entry-level amateur radio license. The overall results have changed little from the preliminary figures cited earlier. Over 6000 responses were received. One of the questions pondered over was how did the respondent's demographic characteristics compare with those of the average amateur population. Here's how they shape up:

### License class:

No license, 3%; Novice, 3%; Tech, 21%, General, 20%; Advanced, 24%; and Extra, 29%.

### Length of time licensed:

0-10 yrs, 39%; 11-20 yrs, 17%; 21-30 yrs, 14%; 31-40 yrs, 14%; 41-50 yrs, 6%; 51-60 yrs, 6%; and over 60 yrs, 1%.



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## Current Age:

30 and under, 6%; 31-40, 18%; 41-50, 26%; 51-60, 17%; 61-70, 22%; 71-80, 10%; 81 and over, 2%.

The final tally shows **60% favoring a code-free, entry-level amateur radio license and 40% opposing it.** Here's how the various groupings break down:

## License class

	No lic.	Nov.	Tech.	Gen.	Adv.	Extra
For:	82%	54%	74%	59%	56%	50%
Against:	18%	46%	26%	41%	44%	50%

## Length of time licensed:

	0-10	11-20	21-30	31-40	41-50	51-60	60+
For:	66%	58%	64%	47%	58%	44%	75%
Against:	34%	42%	36%	53%	42%	56%	25%

## Current Age:

	0-30	31-40	41-50	51-60	61-70	71-80	80+
For:	72%	59%	61%	54%	61%	46%	67%
Against:	28%	41%	39%	46%	39%	54%	33%

## SUIT COULD ENDANGER AMSAT FUNDING

A six-count lawsuit filed by **Interferometrics, Inc., Boulder Division** in Fairfax County Circuit Court names AMSAT's **Jan King, W3GEY**, also of Boulder, Colorado and aerospace competitor, **Orbital Sciences Corporation**. AMSAT is the Washington, D.C. based **Radio Amateur Satellite Corporation**. King is its Vice President of Engineering and the primary designer of their tiny Microsat. He developed the basic Microsat concept ...the small stack of modules using very high efficiency subsystems.

Interferometrics charges that King is attempting to take Microsat technology which has been exclusively licensed to them to an aerospace competitor, Orbital Sciences Corporation (OSC) of Fairfax, Virginia. OSC is one of the most successful private entrepreneurial firms engaged in the financing and manufacture of space vehicles. The suit seeks \$45 million in compensatory and \$15 million in punitive damages.

King and his **KH Consulting Company** partner, **Gordon E. Hardman, KE3D**, joined Interferometrics about a year ago. Reportedly, King's employment was based on Interferometric's obtaining Microsat technology. Six months later King initiated discussions about a licensing arrangement that

would give them exclusive commercial rights to AMSAT's Microsat technology. **Ray Soifer, W2RS**, AMSAT Vice President of Special Projects, completed the licensing arrangement negotiations.

Interferometrics apparently was providing on-going satellite engineering to Orbital Sciences Corporation, a private launch vehicle provider. The complaint charges that King secretly approached OSC about working for them at a higher salary ...with more authority and his own space research facility. Two weeks after the AMSAT licensing deal was signed and dissatisfied with the support he was receiving at Interferometrics, King resigned and went to work for OSC.

The suit, filed by Interferometrics, Inc. accuses King and Orbital Sciences Corp. (OSC) of Fairfax, Virginia, of conspiring to destroy them by depriving Interferometrics of their employees and small-satellite technology acquired from AMSAT. Interferometrics, Inc. is currently developing orbital electronics for OSC's competitor, American Rocket Corporation. Reportedly four employees who were deeply involved in the AmRoc contract ...including Hardman and the AmRoc project manager, left Interferometrics for OSC.

The AMSAT contract calls for Interferometrics to aggressively market Microsat ...or lose their exclusive licensing rights. The suit charges that it is King's plan to strip Interferometrics of its Microsat marketing expertise and force default of the AMSAT agreement to OSC. The lawsuit charges that Interferometrics ability to provide engineering services to AmRoc is now severely handicapped ...and OSC has an unfair advantage in the private satellite launch system competition with AmRoc.

Although Jan King was at Dayton HamVention AMSAT booth, we were not able to talk directly to him. We were told that he did not want to talk to us. We did, however, discuss the situation with AMSAT president **Doug Loughmiller, KO5I**, and **Bob McGwier, N4HY**, an AMSAT Director and their Assistant VP Engineering.

The Microsat spacecraft concept was designed and developed by **Radio Amateur Satellite Corporation** volunteers around the country ...and in Canada, under the direction of Jan King. TAPR, (the **Tucson Amateur Packet Radio Corporation**) and the **American Radio Relay League** were also heavily involved.



The solar powered microprocessor-based satellite cube is *less than a foot* on each side. Microsats are the most technologically advanced satellites developed to date. Four are set to be launched in low-earth orbit later on this year ...two will support world-wide "store-and-forward" AX.25 packet amateur radio communications.

Each flying packet bulletin board system (PBS) will circle the entire surface of the earth during a day several times picking up (uplinking) and disseminating (downlinking) traffic. You can put mail on it destined for a recipient half way around the world. The third Microsat, being constructed by amateurs at *Weber State College* in Utah, will contain a camera that will relay images back to ground.

The fourth is known as *Project DOVE* - digital orbiting voice encoder - is being put together by AMSAT-Brazil. It will transmit voice for educational purposes. There are some Microsat non-amateur applications that will lend themselves to the communication needs of third world nations ...for example to doctors needing medical information in remote locations from the *World Health Organization*.

The needed up/downlink ground equipment is easily carried and inexpensive. Microsat technology eliminates the need to have expensive satellites in a high elliptical or geosynchronous orbit. Interferometrics feels that there are some commercial, academic and research endeavors for which this technology will be useful.

Bob McGwier told us that AMSAT has an agreement with Interferometrics, Inc. and "...we intend to honor that arrangement. We would like to have Interferometrics market the satellite aggressively and we intend to comply with all facets with our agreement. We have no current problems with 'I-square'. The technology is owned by AMSAT and is not being offered anywhere else at all. AMSAT is making no comments on the merits of the lawsuit. The suit is against Jan King claiming that he is personally taking AMSAT and Interferometrics technology to OSC. AMSAT is not involved."

McGwier said that King denied to him that he was delivering any AMSAT owned technology to OSC. "AMSAT would be very unhappy with Jan if he were in fact attempting to take Microsat technology to OSC. It is my belief that he is not doing this. AMSAT is moving forward on the Microsat program ...we begin integration - putting all the modules to-

gether - on June 15th ...and we hope to launch around October 24th."

The orbiting is scheduled to occur this fall as a result of an Ariane 4 rocket lift-off from the *European Space Agency's* launch facility at Kourou, French Guiana. While the primary mission is the orbiting of the Spot-2, land resource spacecraft, four tiny Microsats and two UOSAT's will also be sprayed into space from the same vehicle ...six amateur radio satellites hurled into space from a single launcher! Six amateur satellites were also orbited by Soviet hams when RS-3 through 8 were launched in December 1981.

Bob McGwier said that "After the Microsat technology was fully developed, Jan King went to work with Interferometrics as a full time employee, but became unhappy with the manner in which things were set up. He later resigned and began working for Orbital Sciences Corporation during early April. Interferometrics assumes the reason King left them was to take the Microsat concept to OSC and is the basis for the suit."

"Interferometrics legally owns the right to market Microsats for commercial use. AMSAT will be paid a royalty on any Microsat sales made by Interferometrics ...theoretically it could amount to a lot of money! OSC is a private company that intends to make launch vehicles that can be dropped from under the wing of an aircraft and fly to orbit inexpensively. King is in charge of the group that is developing a large orbital flight electronics system for that launch vehicle. He is not building satellites for OSC." Orbital Sciences is scheduled to demonstrate its Pegasus winged vehicle satellite project to the U.S. military within 90 days.

"It is not illegal for Jan to offer his services anywhere as a professional aerospace engineer. He may work for whoever he pleases. What he may not do is take technology that has been licensed to Interferometrics to OSC."

AMSAT is not involved in the litigation. **Doug Loughmiller, KO5I**, AMSAT president said he had no comment to make on the suit at all. "We intend to do everything possible to help 'I-square' with the commercial marketing and sale of Microsat technology." The suit does make life significantly harder for AMSAT, however, and its ability to raise needed money for its continued amateur space efforts.